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L1: Entry 1 of 1

File: DWPI

Aug 21, 1996

DERWENT-ACC-NO: 1996-372699

DERWENT-WEEK: 200064

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TITLE: Regeneration of used gas-treatment adsorbents - with simultaneous filtration in a reducing atmos.

INVENTOR: DOLIGNIER, J; MARTIN, G ; NOUGIER, L ; DOLIGNIER, J C

PATENT-ASSIGNEE:

ASSIGNEE

CODE

INST FRANCAIS DU PETROLE

INSF

PRIORITY-DATA: 1995FR-0001753 (February 14, 1995)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 727253 A1	August 21, 1996	F	011	B01J020/34
ES 2150080 T3	November 16, 2000		000	B01J020/34
<u>FR 2730424 A1</u>	August 14, 1996		018	B01J020/34
TW 283196 A	August 11, 1996		000	F23J015/00
JP 08290056 A	November 5, 1996		008	B01J020/34
US 5730781 A	March 24, 1998		010	B01D053/12
EP 727253 B1	July 5, 2000	F	000	B01J020/34
DE 69609092 E	August 10, 2000		000	B01J020/34

DESIGNATED-STATES: BE DE ES GB IT NL BE DE ES GB IT NL

CITED-DOCUMENTS:DE 3910716; EP 254402 ; EP 356658 ; EP 495710 ; US 5325797 ; WO 8701050

## APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
EP 727253A1	January 23, 1996	1996EP-0400155	
ES 2150080T3	January 23, 1996	1996EP-0400155	
ES 2150080T3		EP 727253	Based on
FR 2730424A1	February 14, 1995	1995FR-0001753	
TW 283196A	February 9, 1996	1996TW-0101629	
JP 08290056A	February 14, 1996	1996JP-0026780	
US 5730781A	February 13, 1996	1996US-0600727	
EP 727253B1	January 23, 1996	1996EP-0400155	
DE 69609092E	January 23, 1996	1996DE-0609092	
DE 69609092E	January 23, 1996	1996EP-0400155	
DE 69609092E		EP 727253	Based on

INT-CL (IPC): B01 D 53/04; B01 D 53/12; B01 D 53/50; B01 D 53/81; B01 D 53/96; B01 J 20/34; F23 J 15/00; F23 J 15/02

ABSTRACTED-PUB-NO: EP 727253A  
BASIC-ABSTRACT:

Process for regenerating used absorbent used in the treatment of non-combustible gases is novel in that the greater part of the regeneration is carried out with filtration and with simultaneous regeneration of the used absorbent on a filtering element in a reducing atmos..

Also claimed is an installation for carrying out the above process comprising a means for regeneration and novel in that it comprises a filtering element in direct contact with the means for regeneration (13) operating in a reducing atmos., the filter element being such that it allows an increase in the contact time between the absorbent and the means for regeneration.

USE - Process is partic. useful for regenerating adsorbents used to remove sulphur oxides from combustion prod. gases (claimed).  
ABSTRACTED-PUB-NO:

EP 727253B  
EQUIVALENT-ABSTRACTS:

Process for regenerating used absorbent used in the treatment of non-combustible gases is novel in that the greater part of the regeneration is carried out with filtration and with simultaneous regeneration of the used absorbent on a filtering element in a reducing atmos..

Also claimed is an installation for carrying out the above process comprising a means for regeneration and novel in that it comprises a filtering element in direct contact with the means for regeneration (13) operating in a reducing atmos., the filter element being such that it allows an increase in the contact time between the absorbent and the means for regeneration.

USE - Process is partic. useful for regenerating adsorbents used to remove sulphur oxides from combustion prod. gases (claimed).

US 5730781A

Process for regenerating used absorbent used in the treatment of non-combustible gases is novel in that the greater part of the regeneration is carried out with filtration and with simultaneous regeneration of the used absorbent on a filtering element in a reducing atmos..

Also claimed is an installation for carrying out the above process comprising a means for regeneration and novel in that it comprises a filtering element in direct contact with the means for regeneration (13) operating in a reducing atmos., the filter element being such that it allows an increase in the contact time between the absorbent and the means for regeneration.

USE - Process is partic. useful for regenerating adsorbents used to remove sulphur oxides from combustion prod. gases (claimed).

CHOSEN-DRAWING: Dwg.1/5 Dwg.1/5

TITLE-TERMS: REGENERATE GAS TREAT ADSORB SIMULTANEOUS FILTER REDUCE ATMOSPHERE

DERWENT-CLASS: E36 J01 Q73

CPI-CODES: E10-J02D; E11-Q01; E11-Q02; E31-F01A; J01-E02B;

CHEMICAL-CODES:

Chemical Indexing M3 \*01\*



Dynamic Search: INPADOC/Family and Legal Status, Derwent World Patents Index

Records for: PN=CA 1136384

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Records 1-2 of 2 In long Format

☐ 1. 2/34/1 (Item 1 from file: 351)

002518766

WPI Acc No: 1980-36794C/198021

Regeneration of gas desulphurisation spent metal oxide  
adsorbent - using inert gas contg. hydrogen sulphide (NL 7.5.80)

Patent Assignee: EXXON RES & ENG CO (ESSO )

Inventor: CAHN R P; LONGO J M; STEGER J J

Number of Countries: 004 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 2944754	A	19800514				198021 B
NL 7908098	A	19800507				198021
JP 55070324	A	19800527				198028
CA 1136384	A	19821130				198301

Priority Applications (No Type Date): US 78957557 A 19781103

Abstract (Basic): DE 2944754 A

Regeneration of spent metal oxide adsorbents (I), from the Ce, Cu, Fe and Mg oxide gp., used for the desulphurisation of a waste gas stream at 300-700 degrees C., is carried out by contacting (I) with a reducing-regenerating gas contg. 0.5-100.0 (1-70) vol.% H<sub>2</sub>S, rest unreactive gas (He, Ne, Ar, CO<sub>2</sub>, N<sub>2</sub> and/or stream), at 300-700 degrees C. and a suitable flow rate, pref. of 50-50,000 v/v-hr.

The process is esp. useful for the purification of waste gas from Claus plants and the removal of SO<sub>2</sub>/SO<sub>3</sub> from refinery waste gases or waste gases from the gasification of liquefaction of coal, heavy oil sand refineries etc., H<sub>2</sub>S being obtd. as by-prod.

Derwent Class: E36; H05; J01

International Patent Class (Additional): B01D-053/34

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☐ 2.

2/34/2 (Item 2 from file: 345)

3599945

Basic Patent (No,Kind,Date): NL 7908098 A 800507

PATENT FAMILY:

CANADA (CA)

Patent (No,Kind,Date): CA 1136384 A1 821130

REGENERATION OF SPENT SO<sub>2</sub>-SO<sub>3</sub> SORBENTS WITH H<sub>2</sub>S AT MODERATE TEMPERATURE  
(English; French)

Patent Assignee: EXXON RESEARCH ENGINEERING CO

Author (Inventor): LONGO JOHN M; CAHN ROBERT P; STEGER JOHN J

Priority (No,Kind,Date): US 957557 A 781103  
Applic (No,Kind,Date): CA 339103 A 791102  
National Class: \* 23-348  
IPC: \* B01D-053/14; B01D-053/34  
Language of Document: English

## GERMANY (DE)

Patent (No,Kind,Date): DE 2944754 A1 800514  
VERFAHREN ZUR REGENERIERUNG VON VERBRAUCHTEN  
SCHWEFELDIOXID-SCHWEFELTRIOXID- ADSORBENTIEN MIT SCHWEFELWASSERSTOFF  
BEI GEMAESSIGTEN TEMPERATUREN (German)  
Patent Assignee: EXXON RESEARCH ENGINEERING CO  
Author (Inventor): LONGO JOHN M (US); CAHN ROBERT P (US); STEGER  
JOHN J (US)  
Priority (No,Kind,Date): US 957557 A 781103  
Applic (No,Kind,Date): DE 2944754 A 791103  
IPC: \* B01D-053/34; B01D-053/02  
CA Abstract No: ; 93(18)170399Z  
Derwent WPI Acc No: ; C 80-36794C  
Language of Document: German

## JAPAN (JP)

Patent (No,Kind,Date): JP 55070324 A2 800527  
REGENERATION OF USED S022S03 SORPTION MEDIUM BY H2S AT PROPER  
TEMPERATURE (English)  
Patent Assignee: EXXON RESEARCH ENGINEERING CO  
Author (Inventor): JIYON-EMU RONGO; ROBAATO PII KAN; JIYON-JIEI  
SUTEIIGAA  
Priority (No,Kind,Date): US 957557 A 781103  
Applic (No,Kind,Date): JP 79142712 A 791102  
IPC: \* B01D-053/34; B01J-020/34; C01B-017/04  
Language of Document: Japanese

## NETHERLANDS (NL)

Patent (No,Kind,Date): NL 7908098 A 800507  
WERKWIJZE VOOR HET MET METAALOXYDEN ONTZWAVELEN VAN AFVOERGASSTROMEN.  
(Dutch)  
Patent Assignee: EXXON RESEARCH ENGINEERING CO  
Priority (No,Kind,Date): US 957557 A 781103  
Applic (No,Kind,Date): NL 798098 A 791105  
IPC: \* B01D-053/34; B01D-053/02  
Language of Document: Dutch

Inpadoc/Fam.& Legal Stat (Dialog® File 345): (c) 2003 EPO. All rights reserved.

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L2: Entry 1 of 1

File: DWPI

Mar 25, 1987

DERWENT-ACC-NO: 1987-081575

DERWENT-WEEK: 198712

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TITLE: Sulphur di:oxide removal from gases - using absorbent contg. magnesia and platinum-group metal

INVENTOR: DESCHAMPS, A; DEZAEL, C ; ROUSSEL, M

PATENT-ASSIGNEE:

ASSIGNEE

CODE

INST FRANCAIS DU PETROLE

INSF

PRIORITY-DATA: 1985FR-0013727 (September 13, 1985)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 215709 A	March 25, 1987	F	008	
CA 1288215 C	September 3, 1991		000	
DE 3664727 G	September 7, 1989		000	
EP 215709 B	August 2, 1989	F	000	
<u>FR 2587236 A</u>	March 20, 1987		000	
JP 62068527 A	March 28, 1987		000	
JP 95071616 B2	August 2, 1995		007	B01D053/50
US 4725417 A	February 16, 1988		006	

DESIGNATED-STATES: BE DE GB IT NL BE DE GB IT NL

CITED-DOCUMENTS:FR 2090554; FR 2222128 ; FR 2279454 ; FR 2373323 ; GB 1089716 ; US 4241033

## APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
EP 215709A	September 9, 1986	1986EP-0401966	
FR 2587236A	September 13, 1985	1985FR-0013727	
JP 62068527A	September 12, 1986	1986JP-0216927	
JP 95071616B2	September 12, 1986	1986JP-0216972	
JP 95071616B2		JP 62068527	Based on
US 4725417A	September 12, 1986	1986US-0906485	

INT-CL (IPC): B01D 53/02; B01D 53/34; B01D 53/50; B01D 53/52; B01D 53/77; B01D 53/81; B01J 8/00; C01B 17/60

ABSTRACTED-PUB-NO: EP 215709A

BASIC-ABSTRACT:

Removal of SO2 from gases is effected by (a) contacting the gas with a solid

absorbent contg. MgO and one or more Gp. VIII noble metals or their cpds., in the presence of O<sub>2</sub>; and (b) contacting the absorbent with an H<sub>2</sub>S-contg. gas.

Pref. the absorbent is based on Al<sub>2</sub>O<sub>3</sub> and contains 1-50 (esp. 2-30) wt.% MgO and 5-20,000 ppm Pt and/or Pd. It is prepd. by impregnating Al<sub>2</sub>O<sub>3</sub> (surface area 10-300 m<sup>2</sup>/g) with an aq. soln. of a Mg salt, drying, calcining at 400-700 deg.C, and impregnating with an aq. soln. of a Pt and/or Pd cpd.

ADVANTAGE - Gp. VIII noble metals not only catalyse the fixation of SO<sub>2</sub> by conversion to MgSO<sub>4</sub>, but also catalyse the redn. of MgSO<sub>4</sub> to MgO by H<sub>2</sub>S.

ABSTRACTED-PUB-NO:

EP 215709B

EQUIVALENT-ABSTRACTS:

A process for removing sulphur dioxide from a gas containing the same, characterised by a first step of contacting said gas with a solid absorbent containing magnesium oxide and at least one noble metal or compound of a noble metal from group VIII, in the presence of oxygen, and by a second step of contacting the absorbent with a hydrogen sulphide-containing gas, so as to regenerate it. (8pp)

US 4725417A

Sulphur dioxide is removed from a gas stream by contacting it with a solid absorbent contg. 1-50% magnesium oxide and 5-20,000 ppm of at least one noble metal which acts as a catalyst during both the absorption and regeneration stages. The absorption is conducted in the presence of oxygen pref. at 350-750 deg.C. The absorbent is regenerated by contacting it with a hydrogen sulphide contg. stream when the noble metal pref. platinum or palladium acts as a catalyst.

ADVANTAGE - The process gives acceptably fast reaction rates and is esp. suitable for use on sites where both sulphur dioxide and hydrogen sulphide is converted into elemental sulphur. (6pp)

CHOSEN-DRAWING: Dwg.0/1

TITLE-TER MS: SULPHUR DI OXIDE REMOVE GAS ABSORB CONTAIN MAGNESIA PLATINUM GROUP METAL

DERWENT-CLASS: E36 J01

CPI-CODES: E11-Q02; E31-F01A; E34-B01; E34-C02; J01-E03F; N02-F02;

CHEMICAL-CODES:

Chemical Indexing M3 \*01\*

Fragmentation Code

C108 C216 C540 C730 C800 C801 C802 C803 C804 C805

M411 M750 M903 M904 M910 N441 N514 N515 Q431 Q436

Q439

Specific Compounds

01674X

Chemical Indexing M3 \*02\*

Fragmentation Code

A212 A940 C108 C550 C730 C801 C802 C803 C804 C805

C807 M411 M781 M903 M904 M910 Q431 Q436 Q439 Q508

Specific Compounds

01510R

Chemical Indexing M3 \*03\*

Fragmentation Code

A546 A678 A940 C730 C810 M411 M730 M903 Q421